

Claims

1. Floating-caliper disk brake for motor vehicles

- with a frame-like floating caliper (1, 41), which projects over a brake disk (2) and the brake pads (3, 4), one of which is located on each side of the brake disk (2), the caliper being supported with freedom of movement by means of pin guides (14, 57) on a component (15) attached to the vehicle;
- with an inner caliper section (5, 45), which has at least one actuating device (12, 52); and
- with an outer caliper section (6, 46), which is connected to the inner caliper section (5, 45) by means of at least two bridge sections (7, 47), which project over the brake disk (2),

characterized in that

the caliper sections (5, 6; 45, 46) have a lattice-like, light-weight structure of high rigidity.

2. Floating-caliper disk brake according to Claim 1, characterized in that at least the outer brake pad (4) is mounted immovably on the caliper, where the floating caliper (1, 41) is supported tangentially on the component (15) attached to the vehicle so that it can transmit circumferential braking forces.

3. Floating-caliper disk brake according to one of the preceding claims, characterized in that the actuating device (12, 52) comprises a movable actuating element (13), the guide length of which inside the actuating device (12, 52)

is greater than the sum of the maximum wear values of both brake pads (3, 4) and the maximum wear value of both sides of the brake disk.

4. Floating-caliper disk brake according to one of the preceding claims, characterized in that at least one bridge section is designed as a central web (8, 48), which connects the caliper sections (5, 6; 45, 46) to each other in the area of the actuating device (12, 52).

5. Floating-caliper disk brake according to one of the preceding claims, characterized in that at least the outer caliper section (6, 46) has at least one cooling channel (11, 51) to allow a stream of cooling air to reach the outer brake pad (4).

6. Floating-caliper disk brake according to one of the preceding claims, characterized by a brake holder (15) permanently attached to the vehicle, where the retaining arms (17) of the holder project into the frame-like floating caliper (1) and extend as far as the brake disk (2) only on the inside.

7. Floating-caliper disk brake according to Claim 6, characterized in that the floating caliper (1) is supported tangentially against the retaining arms (17) of the brake holder (15) to allow the transmission of circumferential forces.

8. Floating-caliper disk brake according to one of Claims 6 and 7, characterized in that the pin guide (14) has a guide pin (16), which is fastened to the caliper sections (5, 6) of the floating caliper (1) and is supported with freedom of movement in the brake holder (15).

9. Floating-caliper disk brake according to Claim 8,

characterized in that the guide pin (16) connects the two caliper sections (5, 6) to each other, thus acting as a tension rod.

10. Floating-caliper disk brake according to one of Claims 8, 8 [Sic; 8, 9? - translator], characterized in that the guide pin (16) has a suitable, long-lasting surface coating or surface treatment, especially a diamond-like coating, an electroplated nickel coating, a ceramic coating, or a cermet coating, to protect it from the effects of heat and other environmental influences.

11. Floating-caliper disk brake according to one of Claims 1-5, characterized in that at least one pin guide (57) has a load-bearing pin for transmitting circumferential forces.

12. Floating-caliper disk brake according to Claim 11, characterized in that both brake pads are supported tangentially in the floating caliper (41) to allow the transmission of circumferential forces.

13. Floating-caliper disk brake according to Claim 12, characterized in that at least the inner brake pad is guided with freedom of movement on at least one central web (48) of the floating caliper (41) regardless of the state of wear of the pad.